Project Title B

PROJECT PLAN FOR RADIO SET RS-8

1. General Aim

A. The development of equipment as follows:

I The development of a miniature beacon radio transmitter to aid in the location of cargo dropped to the ground by parachute.

II. The development of a portable radio DF receiver to be carried by the operator, which will home on a characteristic signal radiated by the transmitter, enabling the rapid location of the cargo on the ground. (An investigation will be made to determine first, if a satisfactory receiver already exists.)

III. The incorporation of additional features into the equipment above to accomplish the secondary function of aiding in the establishment of ship-to-shore rendezvous. For this communication function the transmitter will be provided with a key for C. W. transmission only.

2. Specific Aim

A. The development of a radio transmitter with the following characteristics:

I. Power Source — Dry batteries.

II. Unitization — A single case containing the transmitter and batteries.

III. Physical Size — Not to exceed _____ long, by _____ wide, by _____deep.

IV. Weight — Not to exceed _____lbs.

V. Extremely Rugged.

VI. Excellent Reliability

VII. Minimum Range — for beacon use — 1 mile
— For commo use — 10 miles.

VIII. Minimum Life — One hour.

IX. Power Output — 12 Watts minimum.

X. Frequency range — 2.5 to 4.5 mcs.

XI. Circuitry—Single tube crystalcontrolled oscillator Modulated by characteristic tone for beacon use and equipped with a key for communication use.

XII. Antenna — For cargo chute locator an omnidirectinnal loop antenna
— For communications use a single wire of variable length.

B. The development of a radio receiver with the following characteristics:

I. Power Source — Batteries

II. Unitization — Single unit ~~will contain~~ containing batteries receiver, and loop.

III. Physical Size —

IV. Weight — not to exceed_____lbs.

V. Ruggedness — Moderately rugged.

VI. Reliability — Good.

VII. Minimum Life — 100 hours.

VIII. Range — I mile minimum.

IX. Frequency range — 2.5 to 4.5 mcs.

X. Circuitry — Superheterodyne

XI. Antenna — Loop.

XII. D-F Characteristics — Sensing & Direction.

3. Proposed methods and time for transmitter program

A. Research	est. time	# personnel	type pers	man hours
Study of similar existing equipment	3 wks	1	proj. eng	120
Study of the system	2 wks.	1	do	80
Formulation of basic circuit	1 wk.	1	do	40
B. Development				
Construction and tests of breadboard models	4 wks	1 1	proj eng. technician	320
Mechanical design preliminary drawings	1½ wks	1 1	draftsman mech. eng.	128

construction of first complete model	4 wks	1 1	proj eng. technician	640
tests and changes on first model	2 wks	1	proj. eng.	160
Submission of first model to test section	1 wk.			
Resulting changes and tests	2 wks.	1 1	proj eng technician	160
Construction of final eng - models	4 wks.	1 1 technicial	proj. eng.	800
tests on finalmodels	1 wk.	1 1	technicia proj. eng.	80
Formulation of complete manufacturing specs. and drawings	4 wks.	1 1 1	Proj. Eng. Draftsman Mech. Eng	480
Total	29½ wks	5		3008

4. Proposed methods and time for Receiver program

A. Research

Study of sim ilar existing wquipment	3 wks.	1	Proj. Eng.	120
Study of the system	2 wks.	1	Proj. Eng.	80
Formulation of Basix cricuits	1 wk.	1	Proj. Eng.	40

B. Development

Construction and tests of breadboard model	5 wks.	1 1	Proj Eng Technician	400
Mechanical Design--Preliminary drawings	2 wks.	1 1	Mech. Eng. Draftsman	160
Construction of first complete model	4 wks.	1	Proj. Eng.	

(c) Construction of first complete model	4 wks	1 Proj Eng 1 Technician 2 Model Shop	160
Tests and Changes on above. (c)	3 wks	1 Proj Eng 1 Technician	240
Submission of (c) to Com OPS and Chief, Eng., for criticism and comments	1 wk		
Resulting Changes and tests	2 wks	1 Proj Eng 1 Technician	160
(g) Construction - final Eng models	5 wks	1 Proj Eng 1 Technician 2 Mod Shop 1 Mech Eng	1000
Tests on above (g)	2 wks	1 Technician 1 Proj Eng	160
Formulation of complete manufacturing specifications and drawings	5 wks	1 Proj Eng 1 Draftsman 1 Mech Eng	600
Totals	35 wks	5 —	3600